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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/683,941	10/09/2003	Harlan T. Beverly	P17143	3879

46915 7590 12/21/2006
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EXAMINER

HUSSAIN, TAUQIR

ART UNIT	PAPER NUMBER
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2196

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	12/21/2006	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

10/683,941

Applicant(s)

BEVERLY ET AL.

Examiner

Tauqir Hussain

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☐ Claim(s) 1-30 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☐ Claim(s) 1-30 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152,

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date 10/23/2006, 02/27/2006.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: ____.

DETAILED ACTION

Claims 1-30 are pending in this application.

Claim Objections

1. Claim 11, objected to because of the following informalities: in the claim there is used two periods Page. 27, (iv) lines 25 and 26, after the word "destination".

Appropriate correction is required.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

3. Claims 1-7, 10-17, 21-27 are rejected under 35 U.S.C. 102(a) as being anticipated by Applicant Admitted Prior Art, hereinafter "AAPA".
4. As to claim 1, AAPA discloses, a method for sending data from a source to a destination (Page.1, lines 14-16), comprising:

a host providing to a sending agent of the source, virtual memory addresses of data to be sent to a destination (Page.3, lines 18-19, where source host has the physical memory location against the virtual memory address and sending agent has

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the access to this data) wherein the data is stored in a plurality of physical locations of the source (Fig.2, Step-52,54, Page.4, lines21-26 and Page.5, lines 1-2), each location having a physical address and a virtual memory address which is mapped to the physical address (Fig.2, block-52, 54, plurality of physical locations; Fig.3, Page.5, lines 3-10, address mapping is shown between virtual memory address to physical memory address) ;

the sending agent providing to the host at least some of the virtual memory addresses of the data to be sent to the destination (Page.5, lines 19-21, where lost data are resent means sending agent providing virtual addresses to host for lost packets);

the host identifying to the sending agent the data addressed by the virtual memory addresses provided by the sending agent (Page. 5, lines 19-21, where tcp agent sends a request to host, asking for lost data from host and host resends the lost data, identifying by associated virtual addresses of lost data); and

the sending agent sending the identified data to the destination (Page.5, lines 19-20).

5. As to claim 11, AAPA discloses, a system adapted to communicate with a destination, comprising:

memory (Page.1, line 12,host computer inherently contains memory);

a processor coupled to the system memory (Page.1, line 12,host computer inherently contains processor coupled to system memory);

an operating system executable by the processor in memory (Page.1, line 12-13)

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a network adaptor (Page.1, lines 10-11);

data storage (Page.1, line 17, packet buffer);

a data storage controller adapted to manage Input/Output (I/O) access to the data storage (Page.1, lines 14-20); and

a device driver executable by the processor in the memory (Page.1, line 18-20),

wherein the memory and the data storage each comprise physical locations adapted to store data, each location having a physical address and a virtual address which is mapped to the physical address (Fig.2, block-52 is virtual address, block-54 is physical address and Page.4, lines 5-6); and

wherein, at least one of the operating system and device driver is adapted to provide a host (Page.1, lines 12-14) and at least one of the device driver and the network adaptor is adapted to provide a sending agent (Page.2, lines 5-7) wherein:

(i) the host provides to the sending agent, virtual memory addresses of data to be sent to a destination (Page.1, line 10, host computer; line 14-15, sending agent is transport protocol driver and Fig.2, block-50, Page.4, line 11-12, virtual memory address and Page.2, lines 13-14, sending data to destination),

(ii) the sending agent provides to the host at least some of the virtual memory addresses of the data to be sent to the destination (Page.2, lines 22-23 and Page.5, Fig.3, block-76, lines 19-20, where lost data is tracked and resend using virtual addresses of data by tcp agent);

(iii) the host identifies to the sending agent the data addressed by the virtual memory addresses provided by the sending agent (Page.5, Fig.3, block-76, lines 19-20, where lost data is tracked and resend using virtual addresses of data); and

(iv) the sending agent sending the identified data to the destination. establish an active connection adapted to send packets of data between the system and a destination (Page.5, lines 19-21, where sending agent continues sending data means an active connection and resending data means there is loss of data recognition through acknowledgment where data is identified though its virtual addresses).

6. As to claim 21, AAPA discloses, an article of manufacture for sending data from a source to a destination, the operations comprising:

a host providing to a sending agent of the source, virtual memory addresses of data to be sent to a destination (Page.3, lines 18-19, where source host has the physical memory location against the virtual memory address and sending agent has the access to this data), wherein the data is stored in a plurality of physical locations of the source (Fig.2, Step-52,54, Page.4, lines21-26 and Page.5, lines 1-2), each location having a physical address and a virtual memory address which is mapped to the physical address (Fig.2, block-52, 54, plurality of physical locations; Fig.3, Page.5, lines 3-10, address mapping is shown between virtual memory address to physical memory address);

the sending agent providing to the host at least some of the virtual memory addresses of the data to be sent to the destination (Page. 5, lines 19-21, where tcp

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agent sends a request to host, asking for lost data from host and host resends the lost data, identifying by associated virtual addresses of lost data);

the host identifying to the sending agent the data addressed by the virtual memory addresses provided by the sending agent (Page. 5, lines 19-21, where tcp agent sends a request to host, asking for lost data from host and host data resends the lost data, identifying by associated virtual addresses of lost data); and

the sending agent sending the identified data to the destination (Page.5, lines 19-20).

7. As to claim 2, AAPA discloses, the method wherein, the host identifying data comprises the host providing to the sending agent the data addressed by the virtual addresses provided by the sending agent, said method further comprising the sending agent storing the data received from the host in a buffer of the sending agent (Page.1, lines 14-20).

8. As to claim 12 and 22, are rejected for the same reasons set forth in claim 2 above.

9. As to claim 3, AAPA discloses, the method wherein, the host identifying data comprises the host providing to the sending agent the physical addresses of the locations containing the data addressed by the virtual memory addresses provided by the sending agent (Page.1, lines 18-20).

10. As to claim 13 and 23, are rejected for the same reasons set forth in claim 3 above.

11. As to claim 4, AAPA discloses, the method wherein, the physical locations include locations of a first memory and locations of a second memory and the data identified by the host is stored in the first memory and the physical memory addresses provided by the host are physical memory locations of the first memory containing the data addressed by the virtual addresses provided by the sending agent (Fig.2, block-50, 52 is first memory, block- 54 is second memory, Page.4, lines 7-15, where data translation is shown between block-52 and block-54)

the method further comprising pinning the physical memory locations of the first memory provided by the host to the sending agent to prevent the data addressed by the virtual addresses provided by the sending agent from being swapped to the second memory (Fig.2, block-52 first memory is pinned by host and host sends the pinned addresses to tcp agent, Page.5, lines 11-21).

12. As to claim 14 and 24, are rejected for the same reasons set forth in claim 4 above.

13. As to claim 5, AAPA discloses, the method further comprising:

the sending agent retrieving from the pinned physical memory locations of the first memory, the data addressed by the virtual addresses provided by the sending agent (Page.1, line 18, transport protocol driver is sending agent, Page.5, lines 14-21, where pinning of physical location is explained and host provides the physical location against sending agents virtual address from which sending agent retrieves the data before sending to destination) ; and

unpinning the pinned physical memory locations of the first memory after the sending agent sends to the destination the data addressed by the virtual addresses provided by the sending agent (Page.5, lines 21-23, after completed data transmission host unpins the memory so data can be swapped to secondary storage location).

14. As to claim 15 and 25, are rejected for the same reasons set forth in claim 5 above.

15. As to claim 6, AAPA discloses, the method further comprising receiving from the destination an acknowledgment for data successfully sent by the sending agent and received by the destination (Page.5, lines 16-19);

wherein the virtual memory addresses provided by the sending agent to the host are the virtual addresses of data sent by the sending agent to the destination but not acknowledged as successfully received by the destination (Fig.2, Page.4, lines 7-15, explains how data is mapped between host, memory and sending agent, and Page. 2, lines 20-22, where hosts waits for the acknowledgment from destination).

16. As to claim 16 and 26, are rejected for the same reasons set forth in claim 6 above.

17. As to claim 7, AAPA discloses, the method further comprising:

receiving from the destination an acknowledgment for data successfully sent by the sending agent and received by the destination (Page.5, lines 16-19);

the sending agent providing to the host the virtual addresses of data sent by the sending agent to the destination but not acknowledged as successfully received by the destination (Page.3, lines 11);

the host identifying to the sending agent the unacknowledged data addressed by the virtual memory addresses provided by the sending agent (Page.5, lines 20-21, where resending data means data has already been identified by host based on the virtual addresses sent by sending agent; and

the sending agent resending the identified unacknowledged data to the destination (Page.5, lines 20-21).

18. As to claim 17 and 27, are rejected for the same reasons set forth in claim 7 above.

19. As to claim 10, the method wherein, the physical locations include locations of a first memory and a second memory and the data to be sent to the destination is stored in the first memory, the method further comprising,

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pinning the locations of the first memory storing the data to be sent to prevent the data to be sent from being swapped to the second memory (Fig. 2, Page.5, lines 11-14, where physical memory is first memory and long term memory is second memory);

the host providing to the sending agent in addition to the virtual memory addresses of the data to be sent, the physical addresses of the locations of the first memory storing the data to be sent (Page.5, lines 14-16);

the sending agent retrieving from the pinned locations of the first memory, the data to be sent (Page.5, lines 16-17); and

unpinning the pinned locations of the first memory storing the data to be sent after the sending agent retrieves the data from the pinned locations of the first memory storing the data to be sent (Page.5, lines 21-23).

20. As to claim 20 and 30, are rejected for the same reasons set forth in claim 10 above.

Claim Rejections - 35 USC § 103

21. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

22. Claim 8-9, 18-19 and 28-29, are rejected under 35 U.S.C. 103(a) as being unpatentable over AAPA in view of RFC 791 "Darpa Internet Program", hereinafter "Darpa".

23. As to claim 8, AAPA discloses, how packets are transported back and forth along with packets contents e.g data, address header and packet sequence number (Fig.1, Page.2, Lines 13-14, 22-23 packet sequence number. AAPA does not disclose explicitly the details of the packet or address contents, a size field containing a value representing the size of the block of data.

However, Darpa discloses, the method wherein, the host providing virtual addresses to the sending agent includes the host providing to the sending agent at least one data structure which includes in an address field containing the virtual address of one of a plurality of memory locations storing a block of data to be sent to the destination, a size field containing a value representing the size of the block of data ;and a sequence number field containing a value representing a packet sequence number associated with data within the block of data (Darpa, Page.32, lines 17-29, where contents of the address information is shown e.g. buffer pointer represents the memory location and length of the buffer represents the size of the data).

Therefore, it would have been obvious to one ordinary skilled in the art at the time the invention was made to combine the teachings of AAPA with the teachings of Darpa in order to provide a reliable address-matching scheme of source and destination data to further avoid any discrepancies in the data.

24. As to claim 18 and 28, are rejected for the same reasons set forth in claim 8 above.

25. As to claim 9, AAPA discloses, the method wherein, the host providing virtual addresses to the sending agent includes the host providing to the sending agent a plurality of data structures, wherein each data structure includes in an address field, the virtual address of one of a plurality of memory locations storing a block of data to be sent to the destination, a size field containing a value representing the size of the block of data, a sequence number field containing a value representing the packet sequence number associated with data within the block of data (Page. 5, lines 20-21, where resending data packets means there are plurality of data structures associated with plurality of data packets); and a link field containing the virtual address of another data structure of the plurality of data structures (Fig.1 step-22, Page. 3, line 5).

26. As to claim 19 and 29, are rejected for the same reasons set forth in claim 9 above.

Conclusion


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tauqir Hussain whose telephone number is 571-272-1247. The examiner can normally be reached on 7:30 AM to 5:00 PM.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nabil El Hady can be reached on 571 272 3963. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

TH


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SUPERVISORY PATENT EXAMINER